ABSTRACT

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Title of diploma thesis: Co-immunoprecipitace as a tool for the study of protein-protein interactions of DHRS7 enzyme

DHRS7 enzyme is a member of short-chain dehydrogenase/reductase superfamily. The enzyme is at least *in vitro* NADPH-dependent reductase of some substance bearing carbonyl group, including androstenedione or all-trans retinal. DHRS7 is close homolog of well-known 11β-hydroxysteroid dehydrogenase 1. Physiological function of DHRS7 is unknown, the level of the knowledge is quite low. Recently, information about some role of DHRS7 in diseases as prostate cancer or insulin resistance was published. A role of poorly characterized proteins as DHRS7 can be predicted based on evidence of their interaction with a protein with revealed function, because proteins inside cells do not usually work alone, they are part of a huge protein complex known as interactome. Knowledge of such protein-protein interactions help us to understand the function and regulation of the protein inside a cell or organism.

The aim of the study is initial investigation of proteins interacting with DHRS7 by co-immunoprecipitation, a basic method for study of protein-protein interactions. Immunoprecipitation procedure with available anti-DHRS7 antibody and pure DHRS7 was introduced to our workplace and optimised. Precleared HeLa cell lysate, where DHRS7 is naturally expressed, was used for study of protein-protein interactions of the enzyme. Imunoprecipitated DHRS7 with potential interaction partners was eluted form protein G particles by 8 M urea and proteins were analyzed by LC-MS. Several proteins were identified as potential interacting partners of DHRS7, the results are necessary to confirm by diverse methods.